

- Please get out notes from yesterday (6.2 notes)
- Please have HW out on desk
- warm up is from worksheet 6.2B- hypothesis testing
- please do #1 & 2

$$\textcircled{2} H_0: \mu = 12,250$$

$$H_a: \mu \neq 12,250$$

$$z = \frac{\bar{x} - \mu}{\sigma / \sqrt{n}} = \boxed{-2.74}$$

$$2 \cdot P(z < -2.74) = \boxed{0.006}$$

- We reject H_0 b/c p-value $< \alpha = 0.05$.

- We have suff. evid. that mean family income is not equal to \$12,250.

Assump
state

- 1) SRS
- 2) σ known
- 3) normal pop
or
 $n \geq 30$

Check

- 1) assumed
- 2) $\sigma = 3180$
- 3) $n = 135 \neq 30$

6.2 2 sided tests (\neq) + Conf. Int.

$$58.6 = \mu$$

$$n = 120$$

$$\bar{x} = 49.1$$

$$\sigma = 5.3$$

① $H_0: \mu = 58.6$

$H_a: \mu \neq 58.6$

⑤ $\bar{x} = 49.1$

⑥ $\mu = 58.6$

② 2 sided

③ $\alpha = 0.05$

→ ⑦ 95% conf. int

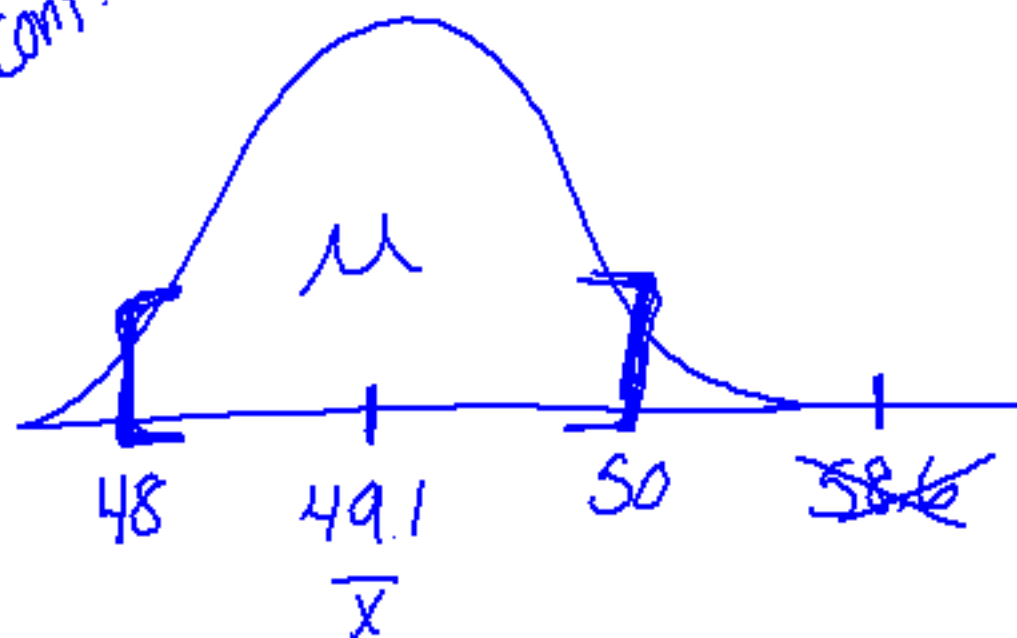
④ $z = -19.64$

$P\text{-val} = 8.32 \times 10^{-86}$

Conclusion = reject H_0

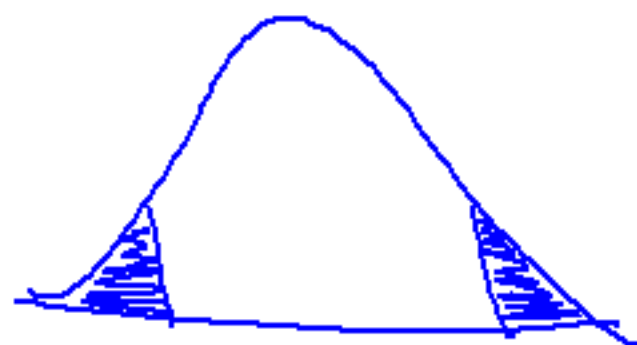
(48.15, 50.05)

⑧ Conf. int.



$$\mu = 58.6$$

2-sided (\neq) tests.



- 2 sided tests (\neq)
- conf. level must "match" w/ the α
 - Ex: 95% conf $\Rightarrow \alpha = 0.05$
 - 97% conf $\Rightarrow \alpha = 0.03$

Steps

- ① write assump. & hyp.
- ② determine $\alpha \Leftrightarrow$ conf. level
- ③ create conf. int. (a, b)
- ④ reject... the claim (μ) falls outside of interval.

fail to reject if the claim (μ) is in interval.

- ⑥ Concl: ① Reject/Fail to reject @ $\alpha = \underline{\hspace{2cm}}$ b/c our claimed mean is outside/inside the $\underline{\hspace{2cm}}\%$ confidence int.
- ② Suff. evid....

Ex

$$H_0: \mu = 61.3$$

$$H_a: \mu \neq 61.3$$

$$n = 24$$

$$\bar{x} = 61.79$$

$$\sigma = 4.5$$

$$\alpha = 0.05 \rightarrow 95\%$$

$$\bar{x} \pm z^* \sigma / \sqrt{n} = (59.99, 63.59)$$

① We fail to reject H_0
@ $\alpha = 0.05$ b/c our
claimed mean falls
inside the 95% conf.
interval.

② Suff. evid...